09/530570
529 Rec'd PCT/PTO 03 MAY 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING NATIONAL PHASE OF
PCT APPLICATION UNDER 35 U.S.C. 371 AND 37 CFR 1.494 OR 1.495

To: Asst. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

(Our Deposit Account No. 03-3975

OIPE JC68 MAY 03 2000 PATENT & TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

Atty Dkt: **PM** 268771 /1144024/DV/MB
M# /Client Ref.

From: Pillsbury Madison & Sutro LLP, IP Group:

Date: May 3, 2000

This is a **REQUEST** for **FILING** a PCT/USA National Phase Application based on:

1. International Application	2. International Filing Date	3. Earliest Priority Date Claimed
PCT/CH97/00426	7 November 1997	7 November 1997
⇧ country code	Day MONTH Year	Day MONTH Year
		(use item 2 if no earlier priority)

4. Measured from the earliest priority date in item 3, this PCT/USA National Phase Application Request is being filed within:

(a) ☐ 20 months from above item 3 date (b) ☒ 30 months from above item 3 date,

(c) Therefore, the due date (unextendable) is May 7, 2000

5. Title of Invention BILLING METHOD IN A TELECOMMUNICATION SYSTEM

6. Inventor(s) RITTER, Rudolf

Applicant herewith submits the following under 35 U.S.C. 371 to effect filing:

7. ☒ Please immediately start national examination procedures (35 U.S.C. 371 (f)).

8. ☐ **A copy of the International Application** as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (file if in English but, if in foreign language, file only if not transmitted to PTO by the International Bureau) including:

a. ☐ Request;
b. ☐ Abstract;
c. _____ pgs. Spec. and Claims;
d. _____ sheet(s) Drawing which are ☐ informal ☐ formal of size ☐ A4 ☐ 11"

9. ☒ **A copy of the International Application has been transmitted by the International Bureau.**

10. **A translation of the International Application** into English (35 U.S.C. 371(c)(2))
a. ☒ is transmitted herewith including: (1) ☒ Request; (2) ☒ Abstract;
(3) 14 pgs. Spec. and Claims;
(4) 1 sheet(s) Drawing which are:
☐ informal ☒ formal of size ☒ A4 ☐ 11"
b. ☐ is not required, as the application was filed in English.
c. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
d. ☒ Translation verification attached (not required now).

RE: USA National Filing of PCT/CH97/00426

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11. ☒ **PLEASE AMEND** the specification before its first line by inserting as a separate paragraph:
a. ☒ --This application is the national phase of international application PCT/CH97/00426 filed November 7, 1997 which designated the U.S.--
b. ☐ --This application also claims the benefit of U.S. Provisional Application No. 60/ _____, filed _____ .--

12. ☐ Amendments to the claims of the International Application **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., before 18th month from first priority date above in item 3, are transmitted herewith (file only if in English) including:**

13. ☒ PCT Article 19 claim amendments (if any) have been transmitted by the International Bureau

14. ☐ Translation of the amendments to the claims **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., of claim amendments** made before 18th month, **is attached (required by 20th month from the date in item 3 if box 4(a) above is X'd, or 30th month if box 4(b) is X'd, or else amendments will be considered canceled).**

15. **A declaration of the inventor** (35 U.S.C. 371(c)(4))
a. ☒ is submitted herewith ☒ Original ☐ Facsimile/Copy
b. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.

16. **An International Search Report (ISR):**
a. Was prepared by ☒ European Patent Office ☐ Japanese Patent Office ☐ Other
b. ☒ has been transmitted by the international Bureau to PTO.
c. ☒ copy herewith (2 pg(s).) ☒ plus Annex of family members (1 pg(s).).

17. **International Preliminary Examination Report** (IPER):
a. ☒ has been transmitted (if this letter is filed after 28 months from date in item 3) in English by the International Bureau with Annexes (if any) in original language.
b. ☐ copy herewith in English.
c.1 ☒ IPER Annex(es) in original language ("Annexes" are amendments made to claims/spec/drawings during Examination) including attached amended:
c.2 ☒ Specification/claim pages #1 - 15 claims #1 - 30
Dwg Sheets #1
d. ☒ Translation of Annex(es) to IPER **(required by 30th month due date, or else annexed amendments will be considered canceled).**

18. **Information Disclosure Statement** including:
a. ☒ Attached Form PTO-1449 listing documents
b. ☐ Attached copies of documents listed on Form PTO-1449
c. ☒ A concise explanation of relevance of ISR references is given in the ISR.

19. ☒ **Assignment** document and Cover Sheet for recording are attached. Please mail the recorded assignment document back to the person whose signature, name and address appear at the end of this letter.

20. ☒ Copy of Power to IA agent.

21. ☐ **Drawings** (complete only if 8d or 10a(4) not completed): ___ sheet(s) per set: ☐ 1 set informal; ☐ Formal of size ☐ A4 ☐ 11"

22. ☐ _____ (No.) **Verified Statement(s)** establishing "small entity" status under Rules 9 & 27

23. **Priority** is hereby claimed under 35 U.S.C. 119/365 based on the priority claim and the certified copy, both filed in the International Application during the international stage based on the filing in (country) _____ of:

	Application No.	Filing Date		Application No.	Filing Date
(1)			(2)		
(3)			(4)		
(5)			(6)		

a. ☒ See Form PCT/IB/304 sent to US/DO with copy of priority documents. If copy has not been received, please proceed promptly to obtain same from the IB.
b. ☐ Copy of Form PCT/IB/304 attached.

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24. Attached: Form PCT/IB/306

25. **Preliminary Amendment:** ATTACHED

25.5 Per Item 17.c2, **cancel original** pages #_____, claims #_____, Drawing Sheets #

26. **Calculation of the U.S. National Fee (35 U.S.C. 371 (c)(1)) and other fees is as follows:**
Based on amended claim(s) per above item(s) ☐ 12, ☐ 14, ☒ 17, ☒ 25, ☐ 25.5 (hilite)

Total Effective Claims	30	minus 20 =	10	x $18/$9	=	$180	966/967
Independent Claims	2	minus 3 =	0	x $78/$39	=	$0	964/965
If any proper (ignore improper) Multiple Dependent claim is present,				add$260/$130		+0	968/969

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4)): →→ **BASIC FEE REQUIRED, NOW** →→→→

A. If country code letters in item 1 are **not** "US","BR","BB","TT","MX","IL" "NZ", "IN" or "ZA"

See item 16 re:

1. Search Report was not prepared by EPO or JPO - - - - - - - - -	add$970/$485		960/961
2. Search Report was prepared by EPO or JPO - - - - - - - - - - - -	add$840/$420	+840	970/971

SKIP B, C, D AND E UNLESS country code letters in item 1 are "US","BR","BB","TT","MX","IL", "NZ", "IN" or "ZA"

→ ☐ B. If USPTO did not issue both International Search Report (ISR) and (if box 4(b) above is X'd) the International Examination Report (IPER), -	add$970/$485	+0	960/961
(only) (one) → ☐ C. If USPTO issued ISR but not IPER (or box 4(a) above is X'd), -	add$690/$345	+0	958/959
(these) (4) → ☐ D. If USPTO issued IPER but IPER Sec. V boxes not all 3 YES, -	add$670/$335	+0	956/957
→ ☐ E. If international preliminary examination fee was paid to USPTO and Rules 492(a)(4) and 496(b) satisfied (IPER Sec. V all 3 boxes YES for all claims), - - - - - - - - - - - - -	add $96/$48	+0	962/963

27.	**SUBTOTAL =**	$1020	
28. If Assignment box 19 above is X'd, add Assignment Recording fee of ----$40		+40	(581)
29. Attached is a check to cover the -	**TOTAL FEES**	$1060	

Our Deposit Account No. 03-3975
Our Order No. 60237 (C#) | 268771 (M#)

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 and 492 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. shown above for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed

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NOTE: File in duplicate with 2 postcard receipts (PAT-103) & attachments.

09/530570

IN THE UNITED STATEMENT PATENT OFFICE

526 Rec'd PCT/PTO 03 MAY 2000

In re PATENT APPLICATION of

RITTER, Rudolf

Atty Dkt.: 268771/1144024/DV/MB

Appln. No.: Group Art Unit:

Filed: HEREWITH Examiner:

Title: BILLING METHOD IN A TELECOMMUNICATION SYSTEM

* * * * * *

Date May 3, 2000

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents
and Trademarks Office
Washington, D.C. 20231

Sir:

Please amend this application as follows:

IN THE CLAIMS:

Second occurrence of claim 10, change the claim number to -- 11 --

Claims 3,4,5,6,7,8,9,10,11 and 14, change " one of the preceding claims " to -- claim 1 --

Claim 12, line 1, change " the preceding claim " to -- claim 11 --

Claim 13, line 1, change " one of the claims 11 or 12 " to -- claim 11 --

Claim 15, line 1, change " the preceding claim " to -- claim 14 --

Claim 17, line 1, change " the preceding claim " to -- claim 16 --

Claim 18, line 1, change " one of the claims 16 or 17 " to -- claim 16 --

Claim 19, line 1, change " one of the claims 16 or 18 " to -- claim 16 --

Claim 20, line 1, change " one of the claims 16 or 19 " to -- claim 16 --

Claim 21, line 1, change " one of the claims 16 or 20 " to -- claim 16 --

Claim 22, line 1, change " one of the claims 16 or 21 " to -- claim 16 --

Claim 23, line 1, change " one of the claims 16 or 22 " to -- claim 16 -

Claim 24,line 1, change " one of the claims 16 to 23 " to -- claim 16 -

Claim 25, line 1, change " one of the claims 16 to 24 " to -- claim 16 -

Claim 26, line 1, change " the preceding claim " to -- claim 25 -

Claim 27, line 1, change " one of the claims 25 or 26 " to -- claim 25 -

RITTER

Claim 28, line 1, change " one of the claims 16 to 27 " to -- claim 16 -

Claim 29, line 1, change " the preceding claim " to -- claim 28 -

Claim 30, line 1, change " one of the claims 25 to 29 " to -- claim 25 -

Respectfully submitted,

PILLSBURY MADISON & SUTRO LLP

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11PRTS

Billing Method in a Telecommunications System

The present invention relates to a billing method in a telecommunications system. Particularly, but not exclusively, the present invention relates to a billing method, which can be executed with a SIM card, as well as to a corresponding SIM card.

The present invention follows from the observation that fees charged for using resources in a telecommunications network can be divided into three layers (Figure 1).

Located in the lowest layer L are the license fees, which must be paid to different licensers for the usage of protected hardware and software resources. Each resource in a telecommunications system can be subject to license fees. Generally, the network operator pays these license fees to the licenser; however, the end user only pays this license fee indirectly through traffic fees paid to the network operator.

Located in the middle layer T are the traffic fees. This layer relates to the regular telecommunication fees, which are paid to the network operator by a user of the telecommunications network, for example for a conversation or a data transmission. In conventional systems, this billing process is executed in a central unit in the network. Nevertheless, pre-paid-systems are known, in which this process can take place in a chipcard of the user, for example. In the GSM mobile radio network, for instance, a service known as advice of charge (AOC) is used for determining the traffic fees. Moreover, another system is described in the patent document EP656733.

Described in the patent application WO 97/40616 is a method, a smart card and a system which makes it possible for users to use wireless telephones anonymously, and to carry out payment for the telephone calls without subscriptions. This is achieved, according to WO 97/40616, in that an expanded SIM card of the telephone can cooperate with a prepaid card, the

SIM card being able, in particular, to receive the number of remaining prepaid units from the prepaid card and, if applicable, being able to admit the telephone in the network, after security checks have been carried out and if there are sufficient prepaid units. The fees for telephone calls can be determined with reference to tariff tables stored in the SIM card and the call duration measured in the telephone, units being subtracted from the units stored in the prepaid card in accordance with the determined fees.

The top layer S relates to the service fees. These fees are charged for the use of services, which are not offered by the network operator. Mostly, these fees are billed and collected by different service providers for different services, which are not directly related to the traffic process.

According to the invention, these different groups of fees are determined and billed separately and independently.

Preferably, the billing process for determining and billing these three layers of fees is executed in the SIM card of the user.

The billing method according to the invention for billing the usage of resources not related to the traffic process is performed by means of a counter in the SIM card, which counter is incremented each time this resource is used. The amount to be billed is determined based on the value of the counter and charged to the user.

Software resources as well as hardware resources can be billed by means of this method. For example, one or more fees can be charged in the SIM card for the usage of contactless interfaces. It is also possible to bill for resources, which are responsible for using the SIM card as an identification card in another system. Furthermore, more than one resource in the SIM card can be billed for independently.

The billed amount can depend on the number of times of use and/or

on the duration of the usage of a specific resource.

This method can be used, for instance, to determine and to charge a license fee for the usage of a resource protected by a patent. But it is also possible to bill for the use of resources offered by an external service provider.

The billed amount can be debited from a pre-paid account of the SIM card. In a variant, a billing record with the billed amount is prepared and transmitted to a sub-fee collector (SFC) in the telecommunications network. Preferably, this transmission only takes place when the value of the counter exceeds a pre-defined amount. Preferably, these billing records are transmitted via said telecommunications network by means of special SMS-messages.

Preferably, the billed amount depends on a fee table stored in the SIM card. Preferably, this table can be added to or changed by the service provider or the licenser, respectively, or by the network operator.

The invention makes it possible to collect license fees directly at the end user instead of at the network operator. New types of licensing agreements can be set up therewith. The method according to the invention offers more transparent billing for the user, and it is more flexible for the licenser or the service provider. Moreover, the invention enables billing that is more just because frequent users pay more fees than users who never or rarely use a specific resource.

Furthermore, the method according to the invention has the advantage that, through the multilayer model, different service providers and licensers can freely offer and bill for their services with different processes. Moreover, the method makes it possible to significantly lower costs because all the processes mentioned can run fully automatically.

The present invention will be better understood with the aid of the

description, given by way of example and illustrated by means of the appended figures:

Figure 1 shows the layer structure of billing.

Figure 2 shows a block diagram of a system according to the invention.

Reference numeral 1 relates to a terminal device, for example a GSM mobile radio telephone or a computer with communications possibilities. The device 1 contains a SIM card 10 (Subscriber Identity Module) which identifies the user in the telecommunications network 2. SIM cards are currently being used in GSM-, DCS-, or PCS mobile devices, among others, or also in future fixed networks with user identification through chipcards. The SIM card can be either a full-size card or a plug-in card. It is connected to the terminal device 1 by means of a contact area on the surface of the card. The SIM card 10 contains data processing means 100, for example a known GSM SIM-processor. SIM cards are described, for instance, in the technical specifications GSM 11.11 or GSM 11.14, available since 1995 or 1996, respectively, at the office of the European Telecommunications Standards Institute, in F-06921 Sophia Antipolis.

A memory area, preferably an EEPROM, is contained in the processor 100 or connected to this processor. The memory area contains programs and data files, which are organized in a hierarchical directory structure. Among others, the data files include elementary files EF as defined in the above-mentioned technical specifications GSM 11.11 or GSM 11.14.

Moreover, the SIM card contains known means for sending and receiving SMS short messages, as well as preferably known filter means for recognizing and temporarily storing short messages, preferably according to the SICAP method described in the patent EP 0689 368 B1, among others. Furthermore, there are preferably encryption means and signing means in

order to decrypt received SMS-messages and encrypt and sign SMS-messages sent. For example, the trusted third party (TTP) method can be used as an encryption method, or decryption means working according to a point-to-point method can be used.

Furthermore, the SIM card contains one or more resources for the usage of which one or more fees must be paid. For example, a resource may be a new software application being stored in the memory area of the processor 100, or new hardware resources expanding the functionality of the SIM card 10, or a combination of software and hardware elements. In the illustrated example, the SIM card contains an inductive interface D (for instance a coil) by means of which the SIM card can communicate with external devices 8 in a contactless manner. For example, the external device 8 may be an access control system or a transaction system (point of sale, POS). Another electronic module 101, connected to the inductance coil and responsible for the contactless communication with the external device 8, is preferably added to the SIM-microcontroller 100. Thereby, the SIM card 10 in the mobile device 1 can communicate via the inductive interface D with the external device 8. In a variant, the casing of the mobile device 1 comprises an infrared interface E, by means of which the card 10 can communicate with other external devices 9.

As another possible new resource, a new additional table with identification parameters 1000 can be provided, for example, by means of which table the SIM card can be used as an identification card in other systems, for instance in a pay-TV or pay-radio system 13, in a computer network 11, and/or in further systems 12.

License fees, traffic fees, and/or service fees must be paid for the usage of the following resources in the illustrated SIM card 10:

- Communication via the GSM network (A-B).

- Interface (B-C) between the SIM-processor 100 and the

communication processor 101.

- Inductive interface C-D between the SIM card 10 and an external device 8.

- Infrared interface C-E between the terminal device 1 and an external device 9.

- Identification table for other systems for using the SIM card 10 as an identification card in other systems (interface B-F).

However, the invention is not limited to the billing of these special new resources; it can also be used for billing in the SIM card for any possible resource offered by external service providers 3 or licensers. A software resource corresponding to a new service can be selected by the user, for instance from a catalogue, from the Internet, etc., and can be loaded into the SIM card of the user by means of special short messages. The service provider will then be paid for the usage of this service by means of the method according to the invention With this method, it is even possible to bill for the usage of resources outside of the SIM card, for example, in the mobile device 1 or even in an external device 11 to 13 not permanently connected to the SIM card. In this latter case, it is necessary to transmit the usage parameters, for instance the number of times or duration of use, to the SIM card when the card is connected to this external device.

According to the invention, the SIM card 10 additionally contains one or more counters 1002, 1002'. Each counter corresponds to one or more resources to be billed for, and is incremented each time these resources are used. The counters may contain hardware and/or software means. In a preferred variant, however, each counter comprises a data file (elementary files EF) in the memory area of the SIM-processor 100, as well as an incrementation program, preferably a new EXE-file in the same memory area, which program

increments this data file when the corresponding resource is used. The counters can be a part of the resource. For example, if the resource is a software resource, it can determine itself how many times it has been used and what fees have to be paid.

The usage of a specific resource may be subject to more than one fee, specifically, a license fee, a traffic fee, and a service fee. In general, these different fees are paid to different recipients. The license fee is determined for a licenser, the traffic fee is determined for a network operator, and the service fee is determined for a service provider. Thus, for each resource, a plurality of counters can be used, corresponding to different fees.

The amount of the fee charged for the usage of a specific resource can depend on the number of times of use or on the duration of the use. In this latter case, the counter value increases per pre-defined time period while this resource is being used, for instance per minute.

In principle, license fees to be charged for the usage of a specific resource in the card are predetermined; however, specific users may profit from a special tariff. In contrast, the amounts for traffic fees and for service fees are preferably dependent on the service. These different amounts, dependent on the user and/or on the service, are stored in a fee table 1001 in the SIM card, which table, as will be explained later, can be set, changed, added to, or deleted from another location in the telecommunications network. Service-dependent fees can thereby be charged.

When the SIM card 10 is inserted in the terminal device 1, it is connected via an interface A to a telecommunications network 2, for example a GSM network. A SIM server 4 is also connected to the network 2, and comprises a short message service center (SSC) 41 for administering short messages. The SSC unit 41 is equipped in such a way that it can communicate with the SIM card 10 by means of special SMS short messages via the network 2. Known filter means in the central unit 41 and in the SIM cards 10 make it

possible to execute special services, for example exchanging data files, instructions, and programs between the SIM server and a SIM card. The SIM server 4 preferably contains in addition a TTP server 40 in order to encrypt and sign the communications between the central unit 41 and the SIM cards 10 in the network. Thereby ensured are the confidentiality, the authenticity of the identity, the authenticity of the information, the integrity, and the indisputability of the origin of the different messages. Nevertheless, a point-to-point encryption and signing method can also be used.

The network operator and/or the various service providers and licensers can add to or adapt the fee table 1002 in the already distributed SIM cards by means of encrypted special SMS short messages. A change of tariffs can then be carried out in an easy manner in that these fee tables in the SIM cards are adjusted as already described in the patent application EP734144. Similarly, the fees charged are transmitted to the recipients by means of SMS messages, as will be explained further below.

Furthermore, the SIM server 4 comprises at least a sub-fee collector (SFC) 42 in which the different collected fees are temporarily stored and processed. A different sub-fee collector is provided for each network operator, who is also provided with a SIM server.

The SIM server 4 is connected to different main fee collectors (MFC) 6, 6', 7, 7' via a network 5, for example via an internet, intranet, extranet, or a X.25 network. These main fee collectors are operated by different licensers and service providers. They comprise servers which query the amounts intended for them, which were received and sorted by the sub-fee collectors, and they pass these amounts on to an accounting system (not illustrated), for example a bank or a financial institution. The communication between the SFC's and the MFC's are signed and preferably additionally encrypted.

When a resource is used, for instance one of the above-mentioned resources subject to one or more fees, the corresponding counter is

incremented. The increment value may be fixed or it may depend on the duration of the usage, for example, or on other parameters, for example time of day, day of the week, location, user category, etc. The increment value may also depend on the fee table 1002. Moreover, the usage of one single resource may cause more than one counter to increment, for example a first counter for the license fees, a second counter for the traffic fees, and a third counter for the service fees.

The charged fee amounts are sometimes very small; specifically, the amount for license fees charged for the usage of a specific resource in the card can be small. In order to avoid a great number of transactions with small amounts, these amounts are preferably not immediately charged to the users. For that purpose, the amount counted by the counter is compared to a pre-defined amount stored in the card, and it is only charged when the amount counted by the counter exceeds the pre-defined amount. If the fee table is not taken into consideration in the incrementation step, this counted amount is turned into a billing record using the fee table 1002.

SIM cards containing a pre-paid amount of money are already known in general in the GSM area. These cards can be reloaded in that an amount of money is paid to the network operator. In these cards, the fees intended for the network operator can be deducted directly from this stored amount of money.

However, most of the fees are not charged to an account inside the card. Instead, a billing record with the amount to be billed is prepared and transmitted to a sub-fee collector of the SIM server 1 <sic. 4 > during or after usage. However, a billing record is preferably only prepared and transmitted when the counter value exceeds the pre-defined amount or only after a pre-defined number of times of use. In a variant, this billing record is not sent by the card 10, but periodically queried by the sub-fee collector 42.

The transmitted billing records can be adapted depending on the service, and they contain the following information, for example: transmitted

amount, user, recipient, pre- or post-paid-process, location, time, etc. As one skilled in the art will recognize, more than one amount, corresponding to more than one counter 1002, 1002', can be grouped and transmitted in one single billing record.

The sub-fee collector 42 receives the billing records from different SIM cards 10 in the network 2, and sorts these records by recipient. The recipient may be a licenser or a service provider who operates a main fee collector 6, 6' or 7, 7', respectively, or he may be the operator of the telecommunications network 2. However, even in the case of a license fee or a service fee, a portion of the transmitted amount of money is preferably assigned to the network operator, and only a portion is passed on as a license or service fee.

The amounts sorted and processed by the sub-fee collector 42 are forwarded via the network 5 to the corresponding main fee collector 6, 6', 7, 7' of the respective financial institution. These amounts can either be sent out periodically or be prepared for querying by the main fee collectors.

Main fee collectors may be used for all types of fees. For example, different fees depending on the service, the type of traffic (voice, data, multimedia), or the type of license may be collected by the responsible collector.

It is also possible to transmit the billing records to the recipient via the contactless interface D or E. In this case, the recipient must be connected to the external device 8 or 9, respectively.

As already mentioned, the already generally known TTP method for signing and encrypting transmitted data and messages is used in the system.

AMENDED PAGE

Claims

1. Billing method for billing the user for the usage of resources (A-F) in a SIM card (10) in a telecommunications network (2), which resources are not responsible for the traffic process, characterized in that

the user is billed for software resources and/or hardware resources of the SIM card 10,

at least one counter in the SIM card is incremented when a said billed-for software resource and/or hardware resource is used in the SIM card (10), and

the amount to be billed is determined from the counter value, which amount corresponds to a service fee and/or license fee.

2. Billing method according to claim 1, characterized in that at least one billed-for resource is a contactless interface (A-F).

3. Billing method according to one of the preceding claims, characterized in that at least one billed-for resource is responsible for the use of the SIM card (10) in another system (10-12).

4. Billing method according to one of the preceding claims, characterized in that a plurality of resources (A-F) can be billed for independently in the SIM card (10).

5. Billing method according to one of the preceding claims, characterized in that at least one counter is incremented depending on the duration of the usage of the respective billed-for resource.

6. Billing method according to one of the preceding claims, characterized in that at least one billed-for resource is protected by patent and

that the billed amount corresponds to a license fee the use of this resource.

7. Billing method according to one of the preceding claims, characterized in that at least one billed-for resource is offered by an external service provider (3) and that the billed amount corresponds to a service fee for the use of the offered service.

8. Billing method according to one of the preceding claims, characterized in that with the use of at least one single resource more than one counter (1002, 1002') is incremented, which counters correspond to different types of fees.

9. Billing method according to one of the preceding claims, characterized in that the amount to be billed can be displayed on a mobile device (1) in which the SIM card (10) is inserted.

10. Billing method according to one of the preceding claims, characterized in that the amount to be billed is charged to a pre-paid account in the SIM card.

10. Billing method according to one of the preceding claims, characterized in that a billing record with the amount to be billed is prepared and transmitted to a billing center (42) in said telecommunications network (2).

12. Billing method according to the preceding claim, characterized in that the amount counted by the counter is compared to a pre-defined amount and that said billing record is only prepared when the amount counted by the counter exceeds the pre-defined amount.

13. Billing method according to one of the claims 11 or 12, characterized in that the billing record is transmitted via said telecommuni-

cations network by means of SMS messages.

14. Billing method according to one of the preceding claims, characterized in that the amount to be billed is determined depending on a fee table (1000) stored in the card.

15. Billing method according to the preceding claim, characterized in that said fee table (1000) can be changed, remotely controlled, by means of SMS messages from another location in said telecommunications network (2).

16. SIM card (10) for users of a telecommunications network (2) which can be inserted into a terminal device (1) in a removable manner and which comprises data processing means (100) enabling the storing of data, which data contains at least identification data of the user in the telecommunications network (2), characterized in that

the SIM card (10) further contains at least one counter, which is incremented when a software resource and/or hardware resource, not responsible for the traffic process, of the SIM card is used, and

an amount to be billed to the user is determined from the counter value, which amount corresponds to a service fee and/or license fee.

17. SIM card according to the preceding claim, characterized in that at least one billed-for hardware resource contains a contactless interface (A-F).

18. SIM card according to one of the claims 16 or 17, characterized in that at least one billed-for resource is responsible for the use of the SIM card (10) in another system (11, 12, 13).

19. SIM card according to one of the claims 16 to 18, characterized in that the usage of a plurality of resources (A-F) is counted and billed for

independently in the SIM card.

20. SIM card according to one of the claims 16 to 19, characterized in that at least one counter is incremented depending on the duration of the usage of the respective billed-for resource.

21. SIM card according to one of the claims 16 to 20, characterized in that at least one billed-for resource is protected by patent and that the billed amount corresponds to a license fee for using this resource.

22. SIM card according to one of the claims 16 to 21, characterized in that at least one billed-for resource is offered by an external service provider (3) and that the billed amount corresponds to a service fee for using the offered service.

23. SIM card according to one of the claims 16 to 22, characterized in that with the use of at least one single resource, a plurality of counters (1002, 1002') are incremented, which counters correspond to different types of fees.

24. SIM card according to one of the claims 16 to 23, characterized in that it additionally comprises means to debit the billed amount from a pre-paid account in the SIM card (10).

25. SIM card according to one of the claims 16 to 24, characterized in that it further comprises means to prepare a billing record with the amount to be billed and to transmit the billing record to a billing center (42) in said telecommunications network (2).

26. SIM card according to the preceding claim, characterized in that it further comprises means to compare the amount counted by the counter with a pre-defined amount and to prepare said billing record as soon as the amount

counted by the counter exceeds the pre-defined amount.

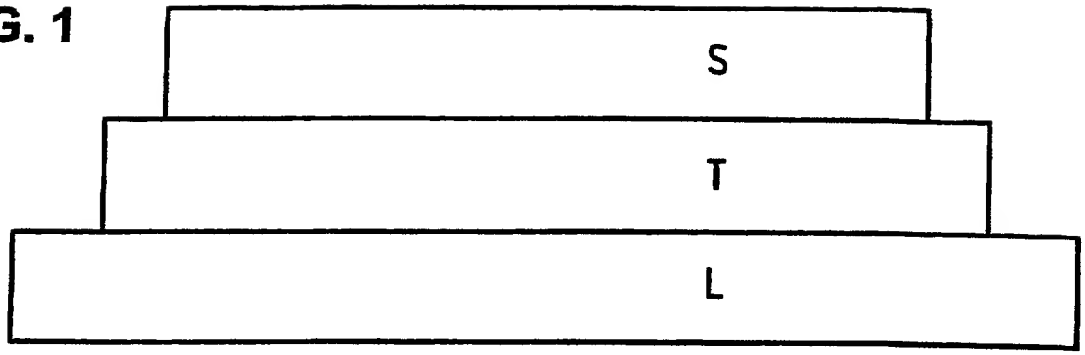
27. SIM card according to one of the claims 25 or 26, characterized in that the billing records are transmitted via said billing center in said telecommunications network by means of SMS messages.

28. SIM card according to one of the claims 16 to 27, characterized in that the billed amounts are dependent upon a fee table (1000) stored in the SIM card.

29. SIM card according to the preceding claim, characterized in that said fee table (1000) can be changed, remotely controlled, by means of SMS messages from another location in the telecommunications network.

30. SIM card according to one of the claims 25 to 29, characterized in that it comprises TTP encryption means, by means of which the billing records can be signed and encrypted.

FIG. 1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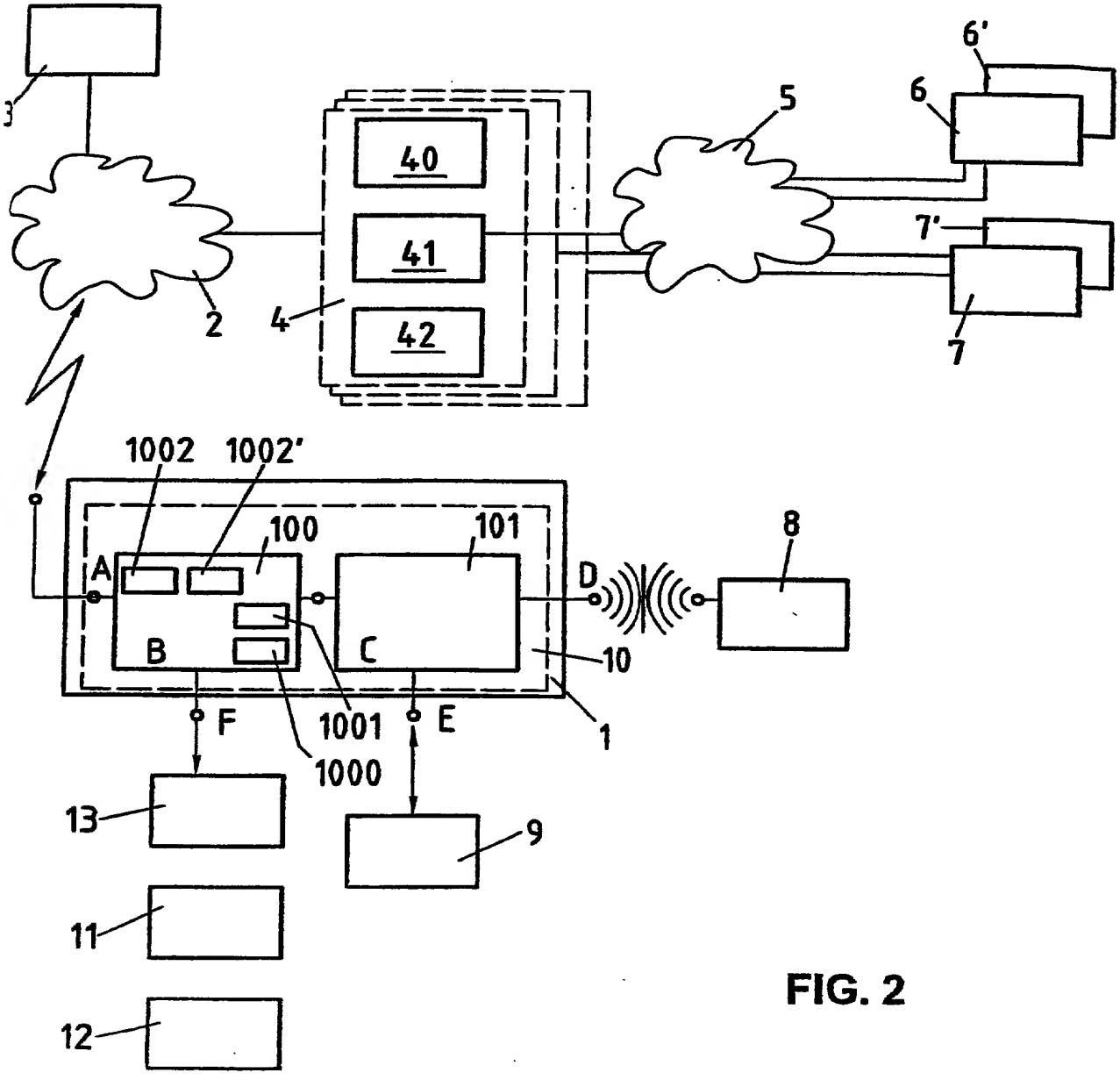
3
2
4
40
41
42
5
6
6'
7
7'
1002
1002'
100
101
A
B
C
D
E
F
1
10
1001
1000
8
9
11
12
13

FIG. 2

FOR UTILITY/DESIGN
CIP/PCT NATIONAL/PLANT
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL
DECLARATIONS

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM&S
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED Billing Method in a Telecommunication System

the specification of which (CHECK applicable BOX(ES))

X -> [XX] is attached hereto

BOX(ES) -> [ ] was filed on _____ as U.S. Application No. 0__/_____

-> [XX] was filed as PCT International Application No. PCT/CH97/00426 on 7 November 1997

-> -> and (if U.S. or PCT application amended) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S) Number	Country	Day/MONTH/Year Filed	Date first Laid-open or Published	Date Patented or Granted	Priority Claimed Yes	No
---	---	---				

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S) Application No. (series code/serial no.)	Day/MONTH/Year Filed	Status pending, abandoned, patented	Priority Claimed Yes	No

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

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(FOR ADDITIONAL INVENTORS, check box [ ] and attach sheet (PAT-116.2) for same information for each re signature, name, date, citizenship, residence and address.)